

REMARKS

In view of the foregoing claim amendments and the arguments that follow, applicant respectfully submits that all of the pending claims are in condition for allowance. Reconsideration and favorable action are requested.

Please note that references to page numbers and line numbers are made with reference to the copy of the application submitted in Response A filed July 11, 2002.

A. Objection to Specification

The Examiner objected to the specification since the subsection Brief Description of Drawings is missing. Accordingly, applicant has provided a subsection entitled Brief Description of Drawings for entry into the application.

Support for the description of FIGURE 1 is found in the application at page 5, lines 4-6.

Support for the description of FIGURE 2 is found in the application at page 5, lines 6-7.

Support for the description of FIGURE 3 is found in the application at page 6, lines 26-28.

B. Rejection of Claims 3, 6-9, 11, and 16-19 under 35 U.S.C. 112, Second Paragraph for Alleged Indefiniteness

With respect to Claims 3, 6-9 and 16-19, applicant has amended the claims in accordance with the Examiner's suggestions.

With respect to Claim 11, applicant notes that the dental structure can be a real tooth, or an artificial dental structure. If the Examiner still regards Claim 11 as indefinite, the Examiner is respectfully requested to call applicant's attorney to clarify why the Examiner regards Claim 11 as being indefinite.

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- C. Rejection of Claims 13-15, 21, 24 and 25 Under 35 U.S.C. 102 (b) as Anticipated by, or in the alternative, Under 35 U.S.C. § 103(a) as Obvious Over Hamilton et al. (U.S. Patent 5,314,492)

The foregoing claims have been amended to recite structures comprising a dental structure comprising a triaxial material. Applicants respectfully submit that the Hamilton et al. reference does not disclose or suggest the claimed subject matter. Thus, applicants submit that the Examiner's rejection should be withdrawn.

- D. Rejection of Claims 1-26 under 35 U.S.C. 103(a) as Being Unpatentable Over Rudo (U.S. Patent 5,176,951) in View of Silvestrini et al. (U.S. Patent 4,610,688) or Kapadia et al. (U.S. Patent 4,816,028), and further in view of Head (U.S. Patent 6,250,193) with or without Akahane et al. (U.S. Patent 5,962,550)

Applicant notes that the pending claims are directed to structures comprising dental structures comprising a multiplicity of layers of a triaxial material; and to methods of constructing, reinforcing, or modifying a dental structure, wherein the methods comprise contacting the dental structure with dental resin and a multiplicity of layers of a triaxial material. Support for the claim amendments reciting a "multiplicity of layers of triaxial material" is found in the specification at page 6, lines 20-28, and in FIGURE 3.

The Examiner argues that it would have been obvious to one of ordinary skill in the art, at the time of the instant invention, to utilize the triaxial braided or woven fiber configuration taught by Silvestrini et al or Kapadia et al in the invention of Rudo to yield the present invention.

It is well established that if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. See, e.g., *In re Gordon*, 221 U.S.P.Q. 1125 (Fed. Cir. 1984)(cited in Manual of Patent Examining Procedure, section 2143.01 (8th edition)).

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Applicant submits that modification of the Rudo invention to use a triaxial material instead of the Leno weave material taught by Rudo would render the Rudo invention unsatisfactory for its intended purpose. Attached hereto as Attachment A is the declaration of David Rudo (hereafter "the Rudo Declaration") who is the inventor of both the present invention and the invention disclosed in the Rudo patent cited by the Examiner (U.S. Patent 5,176,951). As set forth in the Rudo Declaration, the triaxial materials utilized in the practice of the present invention (and disclosed by Silvestrini et al. and Kapadia et al.) are not well adapted to be used in the types of dental applications for which the Leno weave material (disclosed in U.S. Patent 5,176,951) is well adapted. Consequently, applicant submits that use of the triaxial woven fiber configuration taught by Silvestrini et al. or Kapadia et al. in the invention of Rudo would render the Rudo invention unsatisfactory for its intended purpose.

Thus, applicant submits there is no suggestion or motivation to make the modification of the Rudo invention proposed by the Examiner. Consequently, applicant respectfully submits that the present invention is not obvious in view of the foregoing patents cited by the Examiner.

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CONCLUSION

In view of the foregoing claim amendments and the arguments that follow, applicants respectfully submit that all of the pending claims are in condition for allowance. Reconsideration and favorable action are requested.

Respectfully submitted,

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Date:

2/12/03



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VERSION WITH MARKINGS TO SHOW CHANGES MADE FEBRUARY 12, 2003

In the Specification:

A new section entitled BRIEF DESCRIPTION OF THE DRAWINGS has been added

In the Claims:

1. (Amended) A method of constructing, reinforcing or modifying a dental structure comprising contacting said dental structure with dental resin and a multiplicity of layers of triaxial material.
3. The method of Claim 1 wherein said resin is [bis-GMA resin] Bisphenol-A-glycidyl dimethacrylate.
6. (Amended) The method of Claim 1 wherein said triaxial material comprises [Kevlar™] aramid fibers.
7. (Amended) The method of Claim 1 wherein said triaxial material comprises [Spectra™] ultra high molecular weight polyethylene fibers.
8. (Amended) The method of Claim 7 wherein said [Spectra™ is] ultra high molecular weight polyethylene fibers are treated with gas plasma.
9. (Amended) The method of Claim 8 wherein said [Spectra™ is] ultra high molecular weight polyethylene fibers are treated with cold gas plasma.
11. (Amended) The method of Claim 1 further comprising the steps of:
 - (a) applying at least [one layer] two layers of said triaxial material to a resin portion of a dental structure;
 - (b) infusing said triaxial material with resin; and
 - (c) covering at least a portion of said triaxial material with resin.
13. (Amended) A [dental] structure comprising a dental structure comprising a multiplicity of layers of a triaxial material.

14. (Amended) The [dental] structure of Claim 13 wherein said triaxial material is selected from the group consisting of triaxial braided fabric and triaxial woven fabric.
15. (Amended) The [dental] structure of Claim 13 wherein said triaxial material comprises fibers selected from the group consisting of silk, nylon, polyester, polypropylene, aramid, ultra high molecular weight polyethylene, glass, boron, carbon and silicon carbide.
16. (Amended) The [dental] structure of Claim 13 wherein said triaxial material comprises [Kevlar™] aramid fibers.
17. (Amended) The [dental] structure of Claim 13 wherein said triaxial material comprises [Spectra™] ultra high molecular weight polyethylene fibers.
18. (Amended) The [dental] structure of Claim 17 wherein said [Spectra™ is] ultra high molecular weight polyethylene fibers are gas plasma-treated [Spectra™] ultra high molecular weight polyethylene fibers.
19. (Amended) The [dental] structure of Claim 18 wherein said [Spectra™ is] ultra high molecular weight polyethylene fibers are cold gas plasma-treated [Spectra™] ultra high molecular weight polyethylene fibers.
20. (Amended) The [dental] structure of Claim 13 wherein said dental structure is selected from the group consisting of fillings, periodontal splints, directly bonded endodontic posts, directly bonded endodontic cores, bonded orthodontic retainers, bridges, over-denture structures, composite-resin restorations, and implant retained maxial facial prostheses.
21. (Amended) The [dental] structure of Claim 13 further comprising dental resin.
22. (Amended) The [dental] structure of Claim 21 wherein said dental resin is selected from the group consisting of acrylic resin, urethane resin and methyl-methacrylate resin.
23. (Amended) The [dental] structure of Claim 21 wherein said dental resin is [bis-GMA resin] Bisphenol-A-glycidyl dimethacrylate.

24. (Amended) The [dental] structure of Claim 21 wherein said triaxial material is covered with dental resin.

25. (Amended) The [dental] structure of Claim 13 further comprising more than one, successive layer of said triaxial material, each of said successive layers being offset by a desired angle with respect to a preceding layer.

26. (Amended) The [dental] structure of Claim 21 wherein said triaxial material has a refractive index similar to that of said dental resin.